

REMARKS

Claims 1-8 are pending in this application. Claims 1 and 2 are independent claims.

Reconsideration in view of the following remarks is respectfully solicited.

The Claims Define Patentable Subject Matter

The Office Action makes the following rejection:

Claims 1-8 are rejected under 35 U.S.C. §103(a) as being unpatentable over Japanese Publication No. 09-312033 to Koki (hereafter Koki) in view of U.S. Patent No. 6,243,350 to Knight et al. (hereafter Knight).

This rejection is respectfully traversed.

Rejections under 35 U.S.C. §103(a)

Applicant respectfully submits that the claimed invention is distinguishable from the combination of Koki and Knight for at least the following reasons:

The Examiner concedes that Koki fails to disclose a type of base material or the related characteristics of that material, i.e., the temperature coefficient of expansion and/or contraction of the base or other mounted components (see Office Action, page 3). However, in an attempt to show this feature, the Examiner imports Knight.

Specifically, the Examiner alleges that Knight discloses that a material of the base and a wavelength of the light from the light source are selected so that a distance of movement of the focal point ... is within a prescribed tolerance limit. (see Office Action, page 4). Applicant respectfully disagrees with this allegation.

In reviewing Knight, it is clear that Knight merely discloses that optical components materials are selected to have desired dimensions, refractive indices including their temperature dependence, and dispersion properties (i.e., index dependence on the wavelength) (see Knight, col. 22, lines 64-67). In other words, it appears that Knight is merely concerned with selecting the material associated with its lens components.

For example, Knight discloses that the materials for the base plate, the lens mount base, and the lenses are selected to have desired thermal expansion coefficients (see Knight, col. 23, lines 23-25). However, as shown in Fig. 20B of Knight, Knight discloses the base plate as having the lens mounted thereon via the lens mount base. As such, Knight is merely concerned with passively compensating the components directly associated with the "lens" themselves, i.e., the lens mount, the lens and the base plate which the lens are mounted on, instead of the base plate on which the light source and the light detector are mounted, as set forth in the claimed invention.

In contrast with Knight, the present invention recites that a light source and a light detector is provided on the "base" which has a selected base material. As such, Knight is passively compensating a totally different component than that in the present invention.

For example, in the present invention it is acknowledged that when the focal point on the light detector moves in a direction perpendicular to a second direction, a change in the amount of light received by each of the two light receiving regions changes. As a result, signal offsets occur (see present specification, page 13, lines 20-24).

Accordingly, in the present invention the focus offset is canceled by, for example, selecting appropriate materials for the components in consideration of expansion and contraction thereof as well as selecting a light source for emitting light having an appropriate wavelength. Specifically, the selection of the wavelength and the materials is performed so that the sum of (i) the distance of movement of the focal point on the light detector is a direction perpendicular to the second direction caused by the change in the wavelength, and (ii) the distance of movement of the focal point on the light detector in a direction perpendicular to the second direction caused by the expansion or contraction of the components, is within a tolerable limit (see present specification, page 14, lines 1-17).

In contrast with the present invention, applicant submits that the combination of Knight and Koki fails to disclose selecting appropriate materials for the components in consideration of expansion and contraction thereof (i.e., materials for the base that the light source and light detector are provided on) as well as selecting a light source for emitting light having an appropriate wavelength, wherein a distance of movement of the focal point on the light detector

in a direction perpendicular to the second direction is within a prescribed tolerance limit. Instead, Knight merely discloses selecting materials relating only to the optical lens components, i.e., the base plate holding the lens mount plate and the lenses. As such, in Knight the distance between points A and B (i.e., the distance between the two lenses) is controlled by passively compensating for the thermal expansion of the "lens related base plate". (see Knight, col. 23, lines 14-25 and Fig. 20B).

In other words, Knight fails to consider a distance of movement of the focal point on the light detector caused by a change in wavelength of the light source and expansion or contraction of the base holding the light source and light detector, as set forth in the present invention.

Similarly, the combination of Koki and Knight fails to disclose the features as set forth in independent claim 2.

For at least the above noted reasons, applicant submits that the claimed invention is distinguishable from the combination of Koki and Knight.

To establish a *prima facie* case of Obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaack*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP 706.02(j).

Applicant respectfully submits that the combination of Koki and Knight fail to teach or suggest each and every feature as set forth in the claimed invention.

As such, applicant respectfully submits that independent claims 1 and 2 are allowable over the combination of Koki and Knight for at least the reasons noted above.

As for each of the dependent claims not particularly discussed above, these claims are also allowable for at least the reasons set forth above regarding their corresponding independent

claims, and/or for the further features claimed therein.

Accordingly, withdrawal of the rejection of claims 1-8 under 35 U.S.C. §103(a) is respectfully requested.

Conclusion

In view of the foregoing, Applicant respectfully submits that the application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact Carolyn T. Baumgardner (Reg. No. 41,345) at (703) 205-8000 **to schedule a Personal Interview.**

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment from or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §1.16 or under 37 C.F.R. §1.17; particularly, the extension of time fees.

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Respectfully submitted,

By 

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